Code: IT8T3A

**IV B.Tech - II Semester –Regular / Supplementary Examinations
May - 2022**

**ARTIFICIAL INTELLIGENCE
(INFORMATION TECHNOLOGY)**

Duration: 3 hours   Max. Marks: 70

PART – A

Answer *all* the questions.   All questions carry equal marks

11 x 2 = 22 M

1.
   a) What is Intelligence?

   b) Define State Space Search Technique.

   c) What is Heuristic Search?

   d) Describe Constraint Satisfaction Problem.

   e) What is Means-ends Analysis?

   f) Give an example of First-Order Logic.

   g) What is 'Matching' in Rule Based System?

   h) Write about Frames with simple example.

   i) What is script? What is its use?

   j) Write a short note on Perception.

   k) Briefly explain the Knowledge Acquisition Process.

PART – B

Answer any **THREE** questions. All questions carry equal marks.

3 x 16 = 48 M

2. Define the Tic-Tac-Toe problem in detail and explain how it can solved using AI technique.   16 M

3. Explain A* algorithm using a suitable example.   16 M

4. Use the following sentences and translate these into formulas in predicate logic.   16 M
    a)   Marcus was a man
    b)   Marcus was a Pompeian
    c)   All Pompeians were Romans
    d)   Ceaser was a ruler
    e)   Marcus was born in 40 A.D
    f)   All Men are mortal
    g)   No mortal lives longer than 150 years.

5. a) Explain the logic for Non-Monotonic Reasoning.   8 M

   b) Show a sample Frame of a computer department of a college.   8 M

6. a) Write three different ways of combining Speech Recognition with a Natural Language Understanding System.   8 M

   b) Illustrate Robot Architecture.   8M